



Hydra High Definition

Multi-Television Video Gateway

User's Guide

P/N: 95-82xxxx-xx

COPYRIGHT

©2008 Entone, Inc. All rights reserved. This document contains proprietary information protected by copyright. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of Entone, Inc., 2755 Campus Drive, Suite 235, San Mateo, CA 94403. U.S.A.

DISCLAIMER

IF THIS PRODUCT DIRECTS YOU TO COPY MATERIALS, YOU MUST HAVE PERMISSION FROM THE COPYRIGHT OWNER OF THE MATERIALS TO AVOID VIOLATING THE LAW WHICH COULD RESULT IN DAMAGES OR OTHER REMEDIES.

TRADEMARKS

Entone and the tagline "Connecting the Home" are trademarks of Entone, Inc. All other trademarks or registered trademarks belong to their respective owners.

CHANGES

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, Entone, Inc. assumes no liability resulting from the use of the information contained herein.

Entone, Inc. reserves the right to make changes in the product design without reservation and without notification to its users.

P/N: 95-82xxxx-xx August 2007

CUSTOMER SUPPORT AND CONTACT INFORMATION

For Customer Support please call: 650.572.7000

Customer Contact Information:

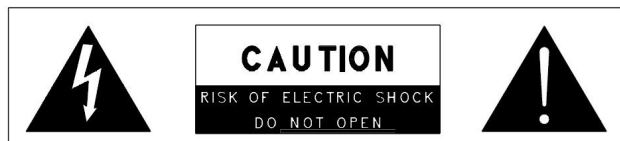
Entone, Inc.
2755 Campus Drive
Suite 235
San Mateo, CA 94403
U.S.A.
Tel: 650.572.7000
www.entone.com

Table of Contents



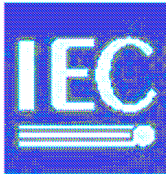
<i>Declaration of Conformity</i>	3
<i>Preface</i>	6
Introducing Hydra HD	6
TYPOGRAPHICAL CONVENTIONS	6
OVERVIEW OF THIS USER'S GUIDE	6
1.1 Important Safety Instructions	7
OPERATION AND CARE	7
2.1 Index to Parts and Controls	9
CONTENTS IN THE BOX	9
FRONT PANEL AND REAR PANEL	10
REMOTE CONTROL	11
3.1 Hydra HD Introduction	12
ABOUT THE HYDRA HIGH DEFINITION MULTI-TELEVISION VIDEO GATEWAY	12
4.1 Connecting the Primary TV	14
CONNECTING THE PRIMARY TV USING COAXIAL CABLE	15
CONNECTING THE PRIMARY TV USING RCA COMPOSITE OR S-VIDEO	16
CONNECTING THE PRIMARY TV USING HDMI OR COMPONENT	18
SETTING HDMI AND COMPONENT OUTPUT RESOLUTION	20
5.1 Connecting TV(s) In Other Rooms	21
CONNECTING TV(S) IN ANOTHER ROOM(S) USING CATV CABLING SYSTEM	22
SETTING UP TV TO USE CATV	22
6.1 Connecting Audio System	23
7.1 Caller ID Display	25
8.1 Connecting eSATA Hard Drive	26
9.1 Powering-Up Hydra	28
10.1 Remote Controls	30
LOADING BATTERIES	30
CONTROLLING THE HYDRA HD	31
ATTACH THE RF REMOTE CONTROL ANTENNA	32
REMOTE CONTROL REGISTRATION	33
CONTROLLING YOUR TELEVISION AND OTHER A/V DEVICES	35
11.1 Closed Captioning	36
12.1 Aspect Ratio	37
13.1 User Menu	38
USING USER MENU	39
SETTING CHANNEL ID	42
SETTING HDMI AND COMPONENT OUTPUT RESOLUTION	42



	SETTING CLOSED CAPTIONING	42
	SETTING FAN SPEED	42
	FORMATTING HARDDISK	43
	SETTING HPNA	43
	SETTING TIVO IR KEYCODE	44
14.1	Specifications	45
15.1	Troubleshooting the Hydra	47

Declaration of Conformity



	<p>To ensure proper use of this product, please read this manual carefully and retain it for future reference. Should the unit require maintenance, contact an authorized service location.</p>
	<p>WARNING: This symbol indicates the presence of uninsulated dangerous voltage within the product's enclosure that constitutes a risk of electric shock. Do not open the product's case.</p> <p>CAUTION: This symbol indicates you must take care; there is risk of damage to the equipment or to yourself.</p>
	<p>To prevent fire or shock hazard, do not expose this product to rain or moisture. To reduce the risk of electric shock, DO NOT remove the cover or back. No user serviceable parts are inside. For servicing refer to qualified personnel.</p> <p>Declaration of Conformity (United States Only) This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communication Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:</p> <ul style="list-style-type: none"> • Reorient or relocate the receiving antenna. • Increase the separation between the equipment and the receiver. • Connect the equipment to a different circuit from that to which the receiver is connected.

	<ul style="list-style-type: none"> Consult the dealer or an experienced radio/TV technician for help.
	<p>Part 68 - Compliance Registration</p> <p>This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. A label on the bottom of this equipment contains, among other information, the Ringer Equivalence Number (REN) and the product identifier. For products approved after July 23, 2001 the product identifier is in the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g. 03 is a REN of 0.3). The REN is used to determine the number of devices that may be connected to a telephone line. For earlier products, the REN is separately shown on the label. If requested, this number must be provided to the telephone company. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. This equipment is designed to connect to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. An FCC compliant telephone cord and modular plug is provided with the equipment. If this terminal equipment causes harm to the telephone network, the telephone company may request you to disconnect the equipment until the problem is resolved. The telephone company will notify you in advance if temporary discontinuance of service is required. If advance notification is not practical, the telephone company will notify you as soon as possible. You will be advised of your right to file a complaint with the FCC if you believe such action is necessary. If you experience trouble with this equipment, do not try to repair the equipment yourself. The equipment cannot be repaired in the field. Contact your ISP for further instructions. The telephone company may make changes to their facilities, equipment, operations, or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make the modifications necessary to maintain uninterrupted service. If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer. This equipment cannot be used on public coin phone service provided by the telephone company. Connection of this equipment to party line service is subject to state tariffs.</p>
	<p>Declaration of Conformity (Europe Only)</p> <p>This product is in conformity with the Council Directives:</p> <ul style="list-style-type: none"> EMC Directive 89/336/EEC Low voltage Directive 73/23/EEC
	<p>Entone products are designed and tested to meet IEC00065, the standard for the Safety of Information Technology Equipment. This is the international standard for these types of products to reduce the risk of product damage and of personal injury. The standard protects against the following hazards:</p> <ul style="list-style-type: none"> Electric shock Hazardous voltage levels Fire — Overload, temperature, material flammability Energy — Circuit with high energy or potential as burn hazards Heat — Accessible part of the product at high temperatures Radiation

	<ul style="list-style-type: none"> Noise
 	<p>Canada Certification Notice The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operations and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The department does not guarantee the equipment will operate to the user's satisfaction. This equipment meets the applicable Industry Canada Terminal Equipment Technical Specification. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment. The Ringer Equivalence Number (REN) is 0.0. The Ringer Equivalence Number that is assigned to each piece of terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.0. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local Telecommunication Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Connection to a party line service is subject to state tariffs. Contact the state public utility commission, public service commission, or corporation commission for information. If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer. If you experience trouble with this equipment, do not try to repair the equipment yourself. The equipment cannot be repaired in the field and must be returned to the manufacturer. Repairs to certified equipment should be coordinated by a representative, and designated by the supplier. Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal, metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.</p> <p>CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.</p>

Preface

Introducing Hydra HD

TYPOGRAPHICAL CONVENTIONS

The following typographic conventions are used in this manual to provide visual clues as to the purpose or specific features of the IOM application.

- **Bold** text describes menu options and selections displayed on the screen.
- *Italics* emphasize statements and points to reference documentation.
- Ellipses (...) indicate truncated text for long examples depicting output that is too long to be shown in its entirety.
- **NOTE/TIP:** A note or a tip describes actions or conditions that can help you obtain optimum performance from IOM.
- **WARNING:** A caution or a warning describes conditions that can result in an error.
- **IMPORTANT:** An important note.

OVERVIEW OF THIS USER'S GUIDE

This User's Guide provides generic information about connecting Hydra HD to your audio and video equipments. Some of the topics covered in this guide are:

- Safety and regulatory information
- Setup
- Connecting Hydra HD to your audio and video equipment
- Connecting Hydra HD to the network
- Powering Hydra HD
- Using the Remote Controls
- Troubleshooting

For a full listing of all of the topics covered in this User's Guide, see the Table of Contents.

Chapter 1

1.1 Important Safety Instructions

Before installing Hydra HD, be sure to unplug Hydra HD, your TV and any other audio-video equipment you are using. This precaution will help to prevent danger of electrical shock and damage to Hydra HD and your equipment.

Be careful when moving your television to avoid accidental tipping or movements that might cause injury to you or those around you.

To ensure proper use of this product, please read this user manual carefully and retain for future reference. Should the unit require maintenance, contact your service provider.

OPERATION AND CARE

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.








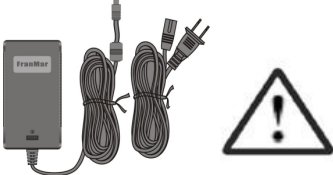



- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- To prevent fire or shock hazard, do not expose this product to rain or moisture.
- To reduce the risk of electric shock, DO NOT remove cover or back. No user serviceable parts inside. Refer servicing to qualified personnel.
- To help prevent electric shock, plug the power cable into properly grounded sources. Use only properly grounded extension cords and adaptors, if they are needed.
- The AC main plug is used as the disconnect device, the disconnect device shall remain readily operable.
- Be sure the cables are located where they will not be stepped on or tripped over.
- Do not spill food or liquids onto the unit.
- Do not push any objects into the free slots. Doing so will damage the unit, can cause fire or electrical shock, and can short out interior components.
- Do not place the equipment in a closed-in wall unit.
- When you disconnect a cable, pull on its connector or on its strain relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cables.
- When you connect a cable, make sure both connectors are correctly oriented and aligned before connecting to avoid bending connector pins.
- A lithium battery CR2032 is used inside the Hydra HD. Danger of explosion if battery incorrectly replaced. Replace only with the same or equivalent type.
- This appliance shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

Chapter 2

2.1 Index to Parts and Controls

CONTENTS IN THE BOX

Item	Picture	Quantity
Hydra High Definition Multi-Television Video Gateway (Hydra HD)		1
RF Remote Control Antenna		1
RF Cable (with F type connectors) (6 feet)		1
RJ11 Telephone Wire (15 feet)		1
RJ45 Ethernet Cable (10 feet)		1
3 Color RCA A/V Cable (6 feet)		1
3 Color Component Cable (6 feet)		1
AC/DC Adaptor Dual Voltage 5.2V @ 7A and 12V @ 3A with 4-pin mini din plug, 1.2M DC Cord Model: FSA072-D13-4		1
URC PLUS Remote Control (Universal Remote Control)		3
Battery (AA-size)		6

FRONT PANEL AND REAR PANEL

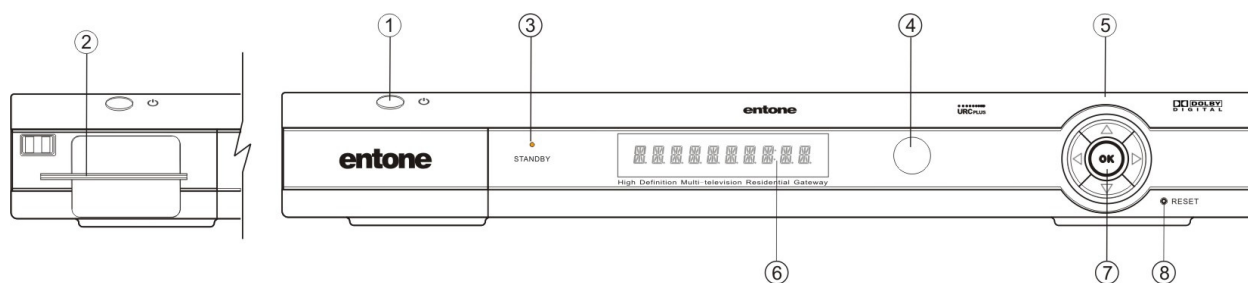


Figure 2-1 Hydra HD Front Panel

Part Name	Description
1. Standby Switch	Power up or put Hydra HD in standby mode
2. Smart Card Slot	For future use
3. Standby / On Indicator	Orange in standby mode and starting Green when started
4. IR receiver	Remote control IR receiver
5. Arrow Keys	UP arrow for setting HDMI and Component resolution Other usage according to middleware
6. Front Panel Display	Start-up messages Clock after starting
7. OK Button	Trigger remote registration mode Other usage according to middleware
8. Reset Pin Hole	Restart Hydra HD

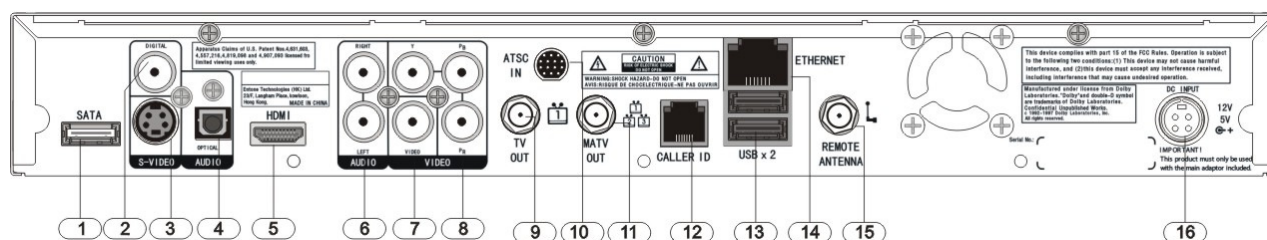


Figure 2-2 Hydra HD Rear Panel

Part Name	Description
1. SATA	eSATA port for connecting to external SATA hard drive for DVR and PLTV
2. DIGITAL AUDIO	S/PDIF digital coaxial RCA audio output for decoder 1
3. S-VIDEO	S-Video output for decoder 1
4. OPTICAL AUDIO	S/PDIF digital optical audio TOSLINK output for decoder 1
5. HDMI	HDMI output for decoder 1
6. AUDIO LEFT / RIGHT	Composite audio output for decoder 1
7. VIDEO	Composite video output for decoder 1
8. Y Pb Pr	Component video output for decoder 1
9. TV OUT	RF Type-F connector for decoder 1 (factory set to channel 10)
10. ATSC IN	Optional RF Type-F connector for ATSC coaxial input
11. MATV OUT	RF Type-F connector for decoder 1, 2 and 3 (factory set to channel 10, 23 and 39)
12. Caller ID	RJ11 plug for connecting to telephone line for caller ID display
13. USB x 2	2 x USB port for future use
14. ETHERNET	RJ45 plug for connecting to ADSL modem or network access equipment
15. REMOTE ANTENNA	RF Type-F connector for connecting the RF remote control antenna
16. DC INPUT	DC power jack

REMOTE CONTROL

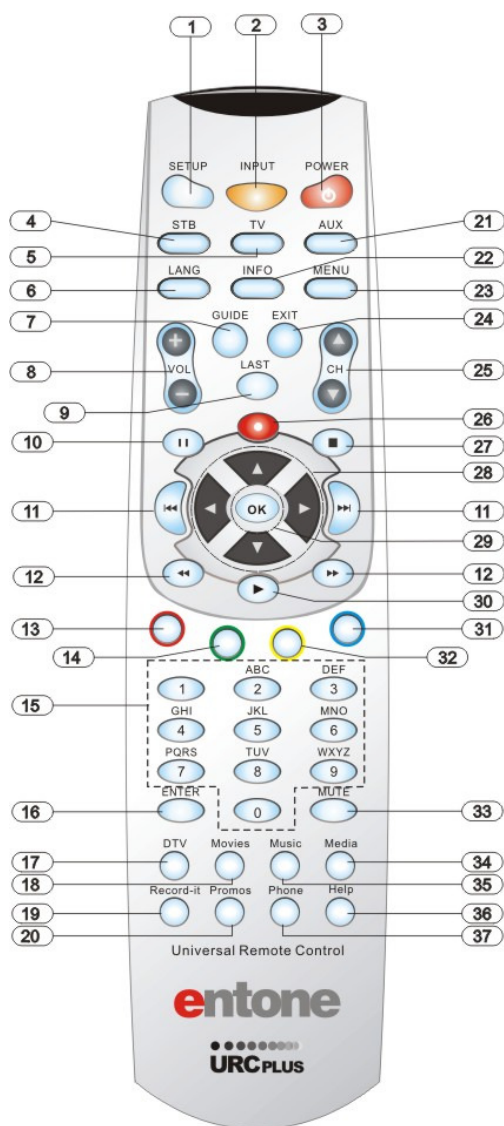


Figure 2-3 Remote Control

NOTE: Please refer to your service operator or middleware vendor for detailed functions and usages.

Part Name	Description
1. SETUP	Special Key reserved for remote programming functions.
2. INPUT	Changes the current A/V input of the selected device. INPUT + MENU triggers STB User Menu.
3. POWER	Switches the power on/off for the currently selected device. Switches STB to power on/standby mode.
4. STB	Puts remote control in STB mode. Presses for more than 5s will trigger remote control registration mode.
5. TV	Selects to control TV
6. LANG	Toggles closed captioning on or off on decoder 1.
7. GUIDE	Displays electronic program guide.
8. VOL +/-	Raises or lowers volume of the currently selected device.
9. LAST	Changes channel to the most recently viewed channel.
10. PAUSE	Pause button for VOD or live channel.
11. PREVIOUS / NEXT CHAPTER	Goes to previous or next movie chapter for VOD.
12. FAST REVERSE / FORWARD	Starts fast reverse or fast forward for VOD or live channel.
13. RED	*
14. GREEN	*
15. NUMBER KEYS	Allows direct access to specific channels and menu items.
16. ENTER	*
17. DTV	Returns to live programming.
18. Movies	Displays the VOD menu.
19. Record-it	Displays the digital recorder menu.
20. Promos	Displays the promotion menu.
21. AUX	Selects to control AUX device.
22. INFO	Displays on-screen information about the current television program.
23. MENU	Displays the on-screen menu. INPUT + MENU triggers STB User Menu.
24. EXIT	Exits the current menu item.
25. CH UP / DOWN	Changes channel up or down.
26. RECORD	Records live channel.
27. STOP	Stop button for VOD or live channel.
28. ARROW KEYS	Navigates right, left, up, down in the on-screen guide.
29. OK	Executes the currently selected menu option.
30. PLAY	Play button for VOD or live channel.
31. BLUE	*
32. YELLOW	*
33. MUTE	Turns the volume of the currently selected device off.
34. Media	Displays the web menu.
35. Music	Displays available music channels.
36. Help	Displays the help menu.
37. Phone	Displays the Caller ID menu.

Chapter 3

3.1 Hydra HD Introduction

ABOUT THE HYDRA HIGH DEFINITION MULTI-TELEVISION VIDEO GATEWAY

Hydra HD is part of Entone's Connected Home Solution. By leveraging existing in-home coax cabling, the Hydra HD offers consumers the ability to share electronics across multiple televisions, thus eliminating the need for multiple set-top boxes and new home wiring. It provides three streams of fully independent video - with any combination of SD/HD, MPEG-2, and MPEG-4 (AVC/H.264) signals, over a single DSL, HomePNA, or Ethernet connection.

Hydra HD can support up to three concurrent streams playing on different TVs. The Hydra HD can be connected to a nearby TV and TV(s) located in another room(s). You can tune your TV to one of the 3 decoders. Each remote control can be registered for one decoder. You use the registered remote control to control the decoder.

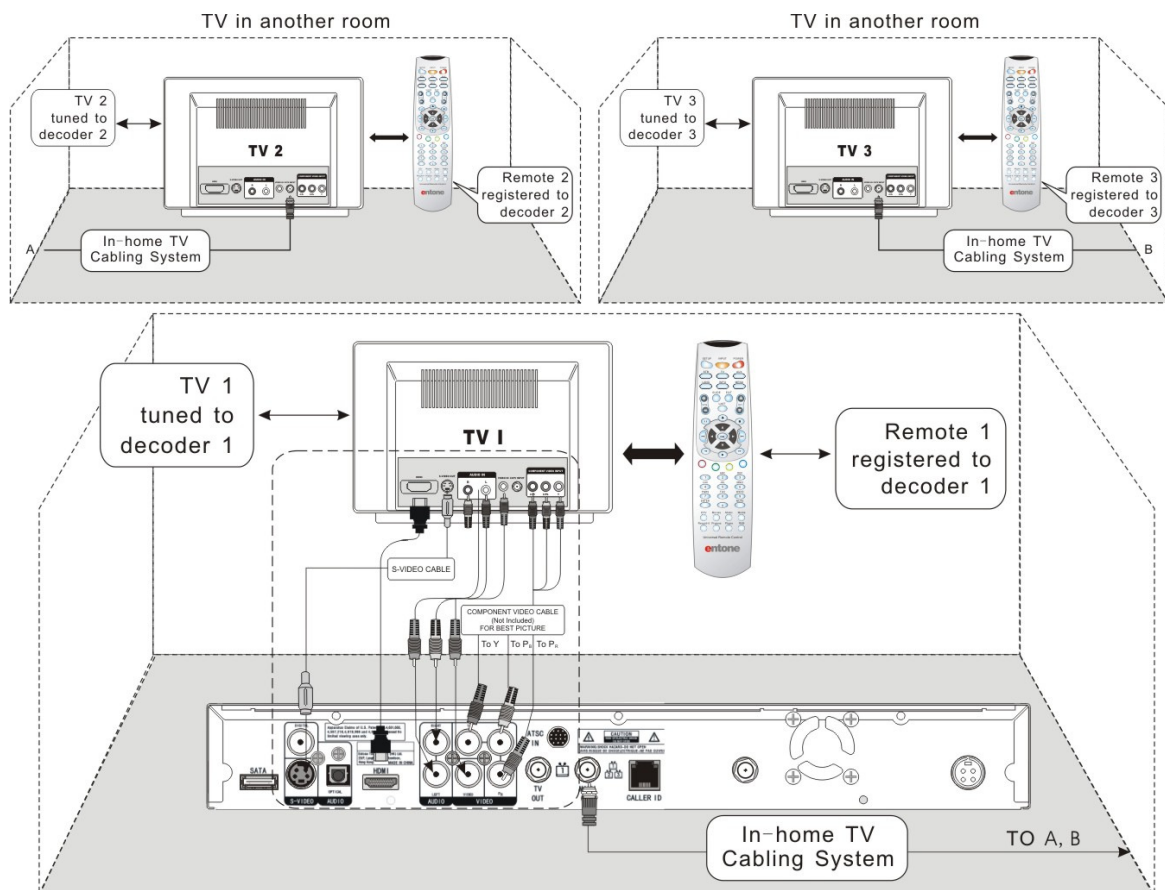


Figure 3-1 Hydra HD Connecting the Home

Hydra HD comes with integrated Caller ID and optional features such as an integrated ATSC/DVB-T tuner for receiving over-the-air broadcast programming, and an integrated HomePNA interface for high-speed broadband Internet service over existing in-home coax and phone line. It supports interoperability and IP networking standards and protocols. Hydra HD helps protect service operators from service theft and content piracy by providing security features such as integrated DVB/DES descrambling, conditional access and, optionally, Macrovision's anti-taping support.

Hydra HD supports full digital video recording capabilities, such as fast forward, rewind, and pause with an optional internal or external SATA hard drive. This enables service operators to deliver whole-home DVR services without having to install a set-top box at each television. Hydra HD offers a modular DVR with storage capacity of up to one terabyte.

Chapter 4

4.1 Connecting the Primary TV

Hydra HD offers several options for connecting audio and video to popular TV and audio equipment.

You can connect Hydra HD to the primary TV using composite, component, S-Video or HDMI connection. You may also connect the Hydra HD to the primary TV using coaxial cable connection.

If your TV supports 480p, 720p or 1080i pictures, use the HDMI or the component output jacks to connect to your primary TV. HDMI stands for High Definition Multimedia Interface. HDMI transfers digital audio and uncompressed digital video on a single cable. As a result, audio cables and video cables do not need to be connected separately. The HDMI output jack is designed to HDMI version 1.1 specifications.

HDMI and component video output support high definition video signal. They will provide the best quality video signal for HD ready TV sets.

S-Video output will provide the best quality video signal for late-model TV sets. The RCA A/V composite, S-Video and TV OUT RF output jacks only support 480i pictures.

The following table shows the video and audio output jacks and their supported video formats:

Table 4-1 Video Format

Video Output	Audio Output	Format
HDMI	No separate audio output required	1080i60, 720p60, 480p60, 480i60 (Selectable and default to 720p60. Please refer to section <i>Setting HDMI and Component Output Resolution</i>)
Component	RCA Audio	1080i60, 720p60, 480p60, 480i60 (Selectable and default to 720p60. Please refer to section <i>Setting HDMI and Component Output Resolution</i>)
S-Video, RCA Composite	RCA Audio	480i60
TV OUT/MATV OUT	No separate audio output required	480i60

CONNECTING THE PRIMARY TV USING COAXIAL CABLE

1. Use the coaxial cable that comes packaged with Hydra HD to connect your TV's antenna input to the Hydra HD's "TV OUT".
2. Tune your TV to channel 10 to view the output.

NOTE:

- In the "TV OUT", it is always hooked to decoder 1 and factory set to use channel 10.
- To set "TV OUT" to another channel ID, please refer to section *Setting Channel ID*.

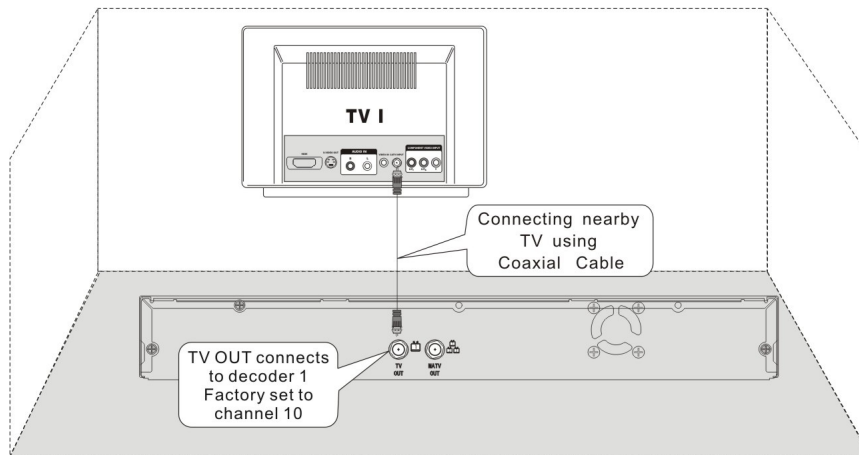


Figure 4-1 Connecting Primary TV using Coaxial Cable

CONNECTING THE PRIMARY TV USING RCA COMPOSITE OR S-VIDEO

1. Acquire the required cable. RCA cable comes packaged with the Hydra HD. S-Video cable is not packaged with the Hydra HD. Before purchasing the cable, consult your TV owner's manual to confirm that your TV supports the video signal output that you plan to use.
2. Connect the video and audio cables to the Hydra HD.
3. Connect the opposite end of the video and audio cables to the matching input in the TV.
4. Plug in your TV and turn on the power using your TV remote control. Use your TV remote control to select the respective video input that has connected to the Hydra HD. Consult your TV owner's manual for instructions as required.
5. Plug in your Hydra HD and turn on the power.
6. You should now see the output from the Hydra HD on your TV screen.

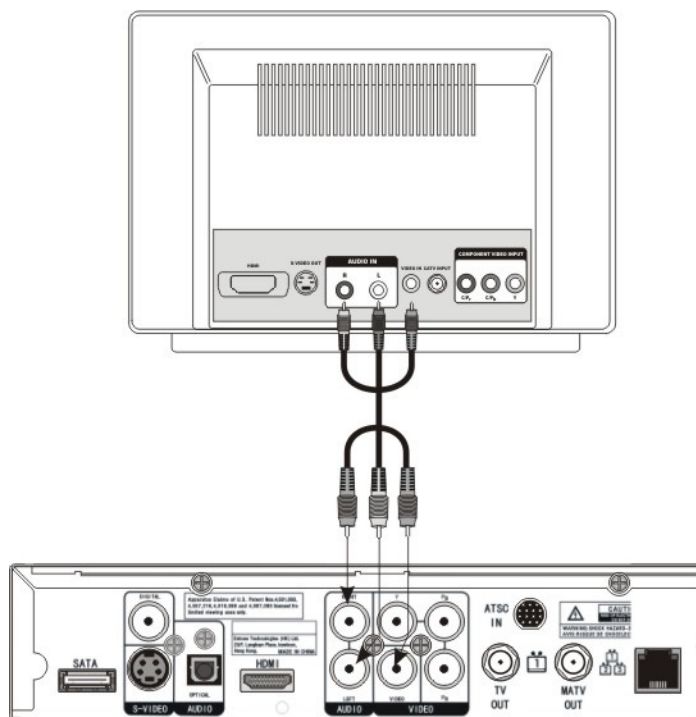


Figure 4-2 Connecting Primary TV using RCA Composite Video/Audio

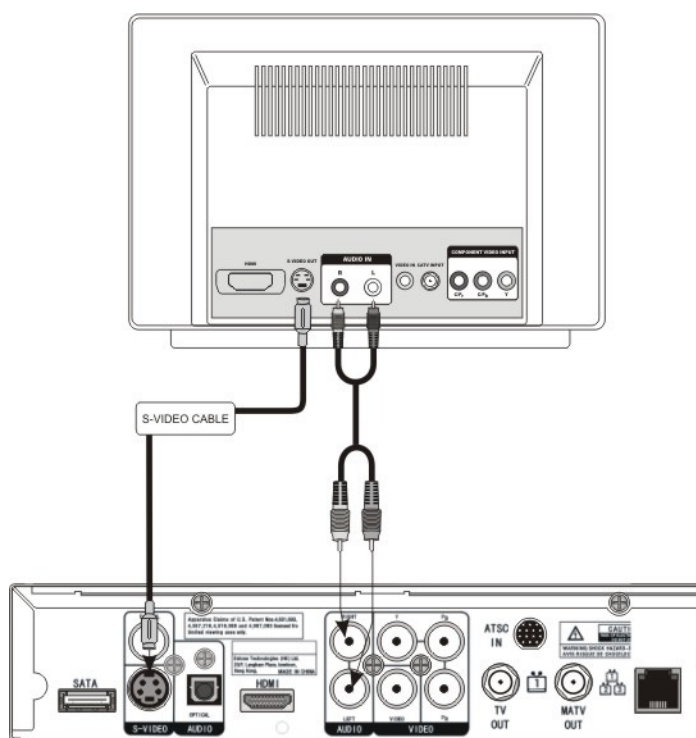


Figure 4-3 Connecting Primary TV using S-Video and Composite Audio

NOTE:

- All the A/V outputs are always hooked to decoder 1.
- Composite and S-Video outputs are always set to 480i.

CONNECTING THE PRIMARY TV USING HDMI OR COMPONENT

1. Acquire the required cable. Component cable comes packaged with the Hydra HD. HDMI cable is not packaged with the Hydra HD. Before purchasing the cable, consult your TV owner's manual to confirm that your TV supports the video signal output that you plan to use.
2. Connect the video and audio cables to the Hydra HD. (HDMI does not require separate audio cable connection.)
3. Connect the opposite end of the video and audio cables to the matching input in the TV.
4. Plug in your TV and turn on the power using your TV remote control. Use your TV remote control to select the respective video input that has connected to the Hydra HD. Consult your TV owner's manual for instructions as required.
5. Plug in your Hydra HD and turn on the power.
6. You should now see the output from the Hydra HD on your TV screen.

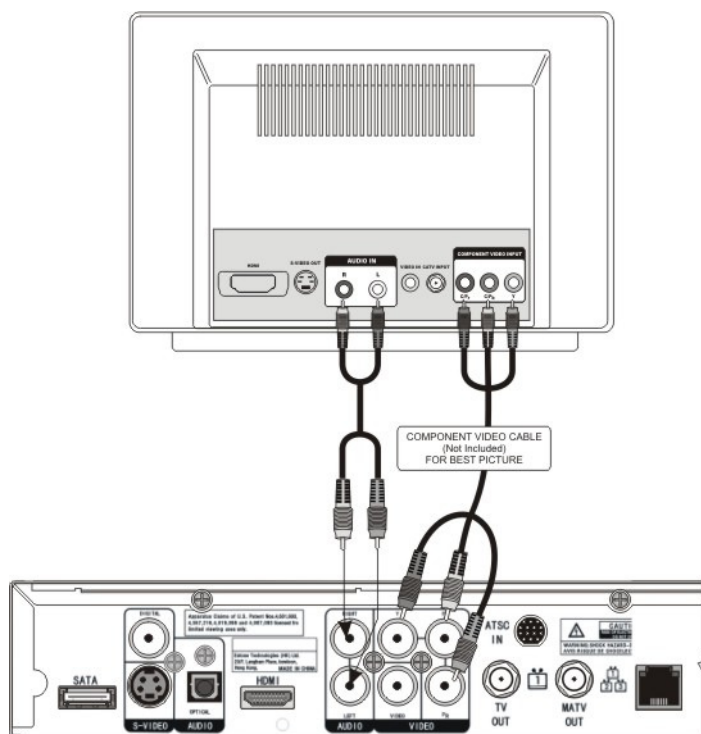


Figure 4-4 Connecting Primary TV using Component and Composite Audio

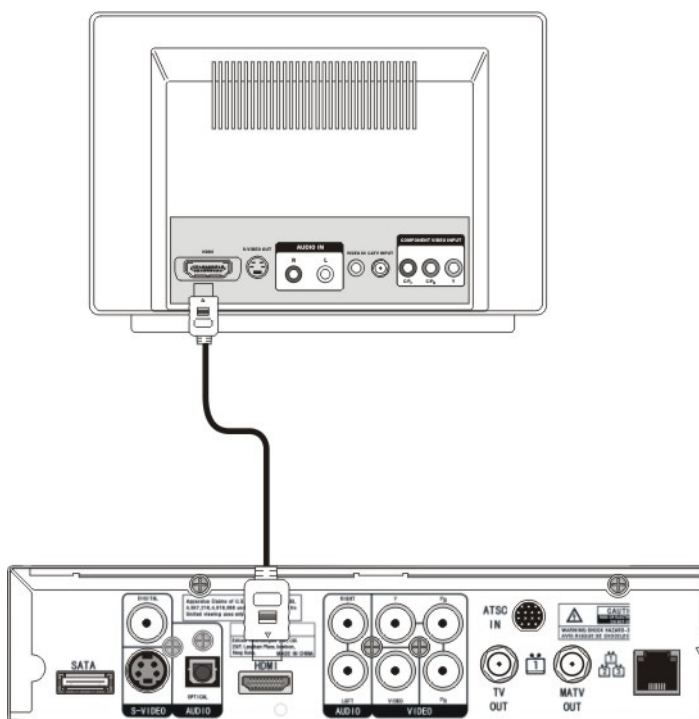


Figure 4-5 Connecting Primary TV using HDMI

NOTE:

- All the A/V outputs are always hooked to decoder 1.
- HDMI is an evolving technology, so it is possible that some TVs may not operate properly with Hydra HD. Component output is the preferred way to connect to your HD TV.
- When the HDMI connection cannot be verified by your TV, disconnect the HDMI cable and then connect it again, or turn off the TV and then turn it on again.
- Analog DVI is not supported. If your TV supports digital DVI but not HDMI, you can use an HDMI to DVI convector cable or adaptor to connect the Hydra HD HDMI to the TV DVI. In this case, you need to connect the audio cable separately.
- Be sure to use an HDMI cable with the HDMI logo.
- If your TV does not support multi-channel audio, the Hydra HD will output PCM audio only.
- Please refer to the next section to set the Component and HDMI output resolution.

SETTING HDMI AND COMPONENT OUTPUT RESOLUTION

You can select 1080i, 720p, 480p or 480i on the HDMI and Component output. When you set the output, both HDMI and Component outputs are set to the selected resolution. The S-Video, RCA Composite and RF outputs are always set to 480i and will not be affected by the HDMI and Component resolution setting.

To select the HDMI and Component output resolution:

1. Press and hold the Hydra HD front panel "UP" arrow for 5 seconds.
2. Keep on pressing the "UP" arrow, the resolution indicator in the Hydra HD front panel display will illuminate in a round robin manner from "1080i -> 720p -> 480p -> 480i".
3. When your desired resolution is illuminated, release the "UP" arrow. Then, both the HDMI and Component outputs will be set to the selected resolution.

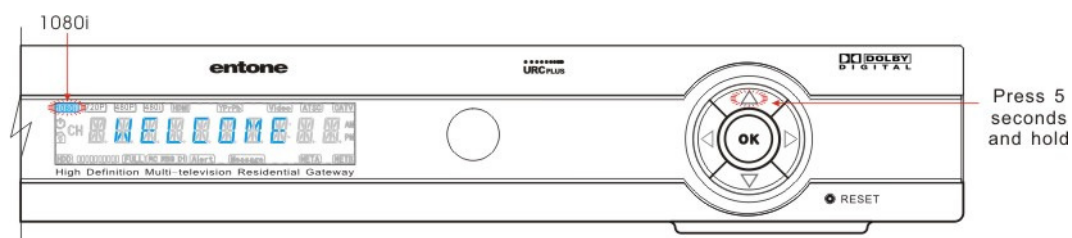


Figure 4-5 Setting HDMI and Component Output Resolution

NOTE: If your TV does not display the video or error message is displayed after you have selected a new resolution, your TV may not support the selected resolution. Refer to your TV owner's manual for verification. Repeat the above procedures again to find a resolution supported by your TV.

Chapter 5

5.1 Connecting TV(s) In Other Rooms

This section describes how to connect the Hydra HD to the cable-ready remote TV(s) located in another room(s) away from the Hydra HD. This installation uses your in-home TV cabling system. If your house does not have built-in TV cabling, it will be necessary to run cables from the Hydra HD to each remote TV. Due to the difficulty of this installation, you should consider having this professionally installed.

NOTE: When connecting to the in-home cabling system, you must meet the FCC requirements. To meet these requirements, an in-line coaxial attenuator may need to be installed using the following guidance:

- If connecting to your in-home cabling system to distribute the signal to TV(s) in other rooms, in most cases you will not have to install the attenuator on the “MATV OUT” port for typical in-home cabling systems.
- If connecting directly to a TV tuner port, you must install the attenuator in the cable between the “MATV OUT” port and the TV tuner.

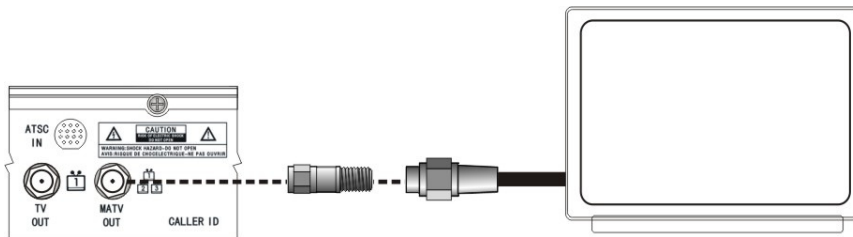


Figure 5-1 Connecting Attenuator

CONNECTING TV(S) IN ANOTHER ROOM(S) USING CATV CABLING SYSTEM

Follow these steps to use the in-home cabling system:

1. Connect "MATV OUT" to the main video source of your in-home cabling system using the RF cable provided.
2. Connect the tuner input of the remote TV(s) in other rooms to an existing wall cable outlet using a RF cable.
3. Plug in your Hydra HD and turn on the power using your remote control.
4. Plug in your TV.
5. Tune the other TV sets to channel 10 for decoder 1, channel 23 for decoder 2 and channel 39 for decoder 3.

NOTE: In the "MATV OUT", the Hydra HD is factory set to use channel 10 for decoder 1, channel 23 for decoder 2 and channel 39 for decoder 3.

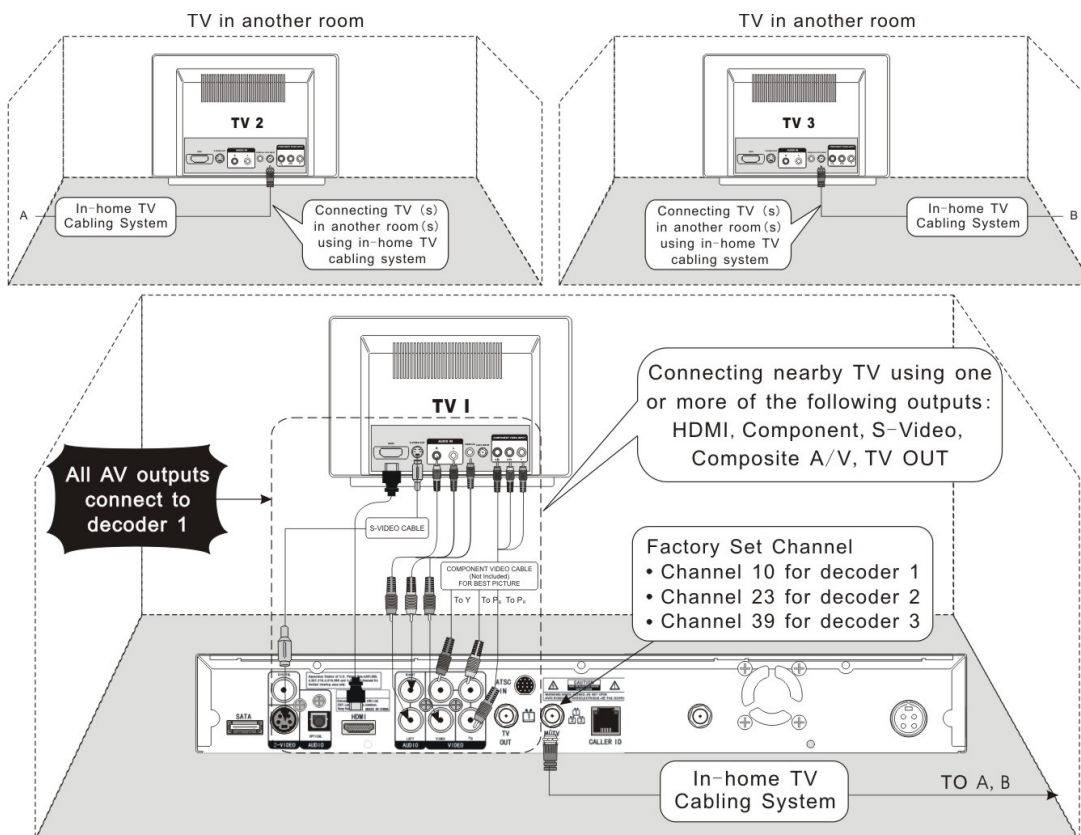


Figure 5-2 Connecting TV(s) in Another Room(s)

SETTING UP TV TO USE CATV

In order for the Hydra HD to feed video signal to TV using "TV OUT" or "MATV OUT", your TV must be configured to receive signal from CATV rather than from the antenna.

Most TVs use either a physical switch located on the rear of the TV or with on-screen programming to configure to use CATV. Consult your TV owner's manual for instruction if required.

Chapter 6

6.1 Connecting Audio System

Your Hydra HD supports AC-3 (Dolby Digital 5.1 channel). To enjoy multi-channel surround-sound, the content source must carry multi-channel AC-3 signal. Please refer to your service provider for availability of AC-3 5.1 programs.

You can enjoy multi-channel surround-sound such as 5.1 channel by connecting the Hydra HD to an amplifier compatible with Dolby Digital. You can connect to your amplifier by either using the 75ohm digital audio coaxial output or the digital optical audio output.

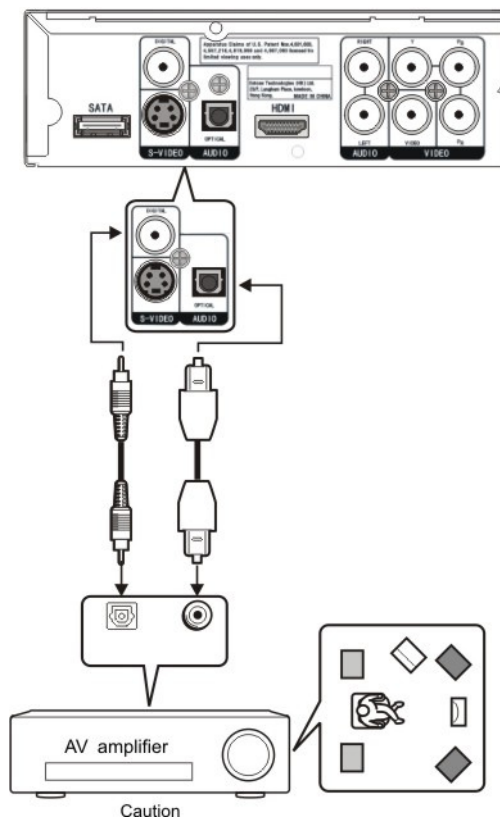


Figure 6-1 Connecting Hydra HD to Audio System

Consult your audio system user guide for connection. Take necessary precautions when working with electric equipment. Remove the devices from wall power and be sure to use caution when moving equipment to prevent injury.

If your connected TV or A/V equipment does not support AC-3, you can disable AC-3. You can enable or disable AC-3 per decoder.

Enabling or disabling AC-3 is controlled by the IPTV middleware. For details of enabling and disabling AC-3, please refer to usage instruction provided by your service operator.

Please refer to the following table for details of audio output used when AC-3 is enabled or disabled.

Table 6-1 Audio Format

	Audio Track	Decoder 1 HDMI	Decoder 1 Digital Coaxial and Optical Audio Output	RCA Audio Output	TV OUT and MATV OUT
AC-3 Enable	With AC-3 Track	AC-3 track selected and output in AC-3	AC-3 track selected and output in AC-3	AC-3 track selected and down-mixed to analog audio	AC-3 track selected and down-mixed to analog audio
AC-3 Enable	Normal Audio Track Only	PCM	PCM	Analog audio	Analog audio
AC-3 Disable	With Normal Audio Track	Normal audio track selected and output in PCM	Normal audio track selected and output in PCM	Normal audio track selected and output in Analog audio	Normal audio track selected and output in Analog audio
AC-3 Disable	AC-3 Track Only	Down-mixed PCM	Down-mixed PCM	Down-mixed analog audio	Down-mixed analog audio

WARNING: When connecting via the digital coaxial or optical audio output to a TV or A/V decoder that does not have Dolby Digital decoding capability, be sure to set AC-3 off to avoid damage to equipment.

Chapter 7

7.1 Caller ID Display

The Hydra HD can display caller ID information of telephone incoming call on TV. In order to enjoy this service, your telephone line and TV service must have caller ID already set up. Check with your telephone and TV service provider on how to enable caller ID service.

To get ready your Hydra HD to enable caller ID service:

1. Connect the telephone line to the “CALLER ID” jack on the rear panel. Telephone wire comes packaged with the Hydra HD. You may connect directly to the telephone line socket if there is one available. If your telephone line socket is already connecting to an existing phone, use a splitter.
2. For details of setting up and using the caller ID service, consult your TV service user guide.

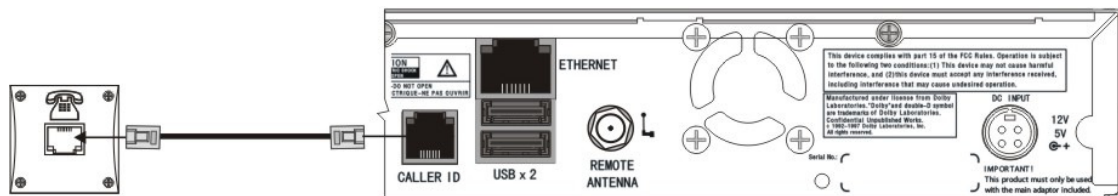


Figure 7-1 Connecting Hydra HD for Caller ID Display

Chapter 8

8.1 Connecting eSATA Hard Drive

Hydra HD supports DVR (Digital Video Recording) and PLTV (Pause Live TV) by using an internal or external eSATA (External Serial Advanced Technology Attachment) hard drive. This section applies when you need to install an external eSATA hard drive.

DVR allows you to record live or scheduled channel programs into the hard drive and view those recorded programs as VOD at later times. PLTV allows you to pause and fast track live programs. For details of DVR and PLTV service availability and operation usage, please refer to your network and TV service provider.

eSATA hard drive is an optional item. eSATA is an external interface for SATA technologies. The SATA interface is more streamlined than ATA and provides serial architecture for greater speed than the older parallel technology.

To get ready your Hydra HD to enable DVR and PLTV service:

1. Connect the external hard drive using eSATA cable.
2. The eSATA hard drive requires separate power supply. Connect the eSATA hard drive power supply to the power source.

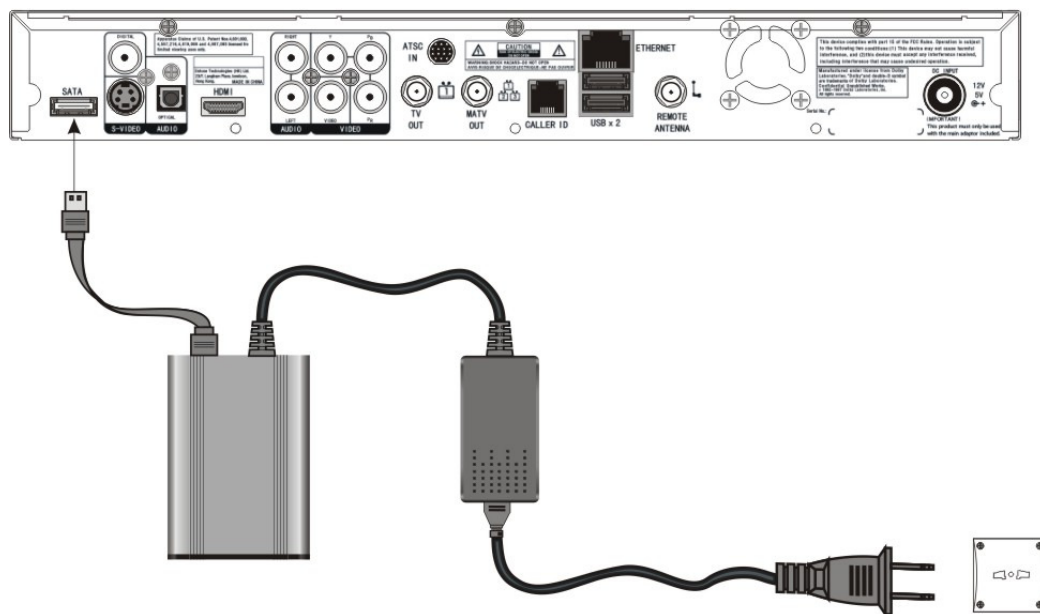


Figure 8-1 Connecting eSATA hard drive

When you connect a new hard drive for the first time, hard drive formatting is required. After hard drive formatting, all existing data in hard drive will be erased. When Hydra HD boots up, a confirming message will be displayed for 30s before formatting. If you decide not to proceed the formatting, power off Hydra HD and remove the hard drive.



Figure 8-2 Confirming eSATA hard drive formatting

Message will be showing when the hard drive is being formatted. The hard drive formatting may take up to 10 min depending on the hard drive size. Do not power off Hydra HD and hard drive during disk formatting.



Figure 8-3 eSATA hard drive formatting

ATTENTION: Connect power to the hard drive before powering up Hydra HD. If you power up Hydra HD before powering up the hard drive, the DVR and PLTV service will not be available.

ATTENTION: When you connect a new hard drive for the first time, Hydra HD will display message saying the hard drive is being formatted when it boots up. The hard drive formatting may take up to 10 min depending on the hard drive size. Do not power off Hydra HD and hard drive during disk formatting.

Chapter 9

9.1 Powering-Up Hydra

Follow these steps to power up the Hydra HD:

1. Follow your TV/Network service provider's instruction to connect the Hydra HD to your network modem or network access unit using the Ethernet cable comes packaged with the Hydra HD.

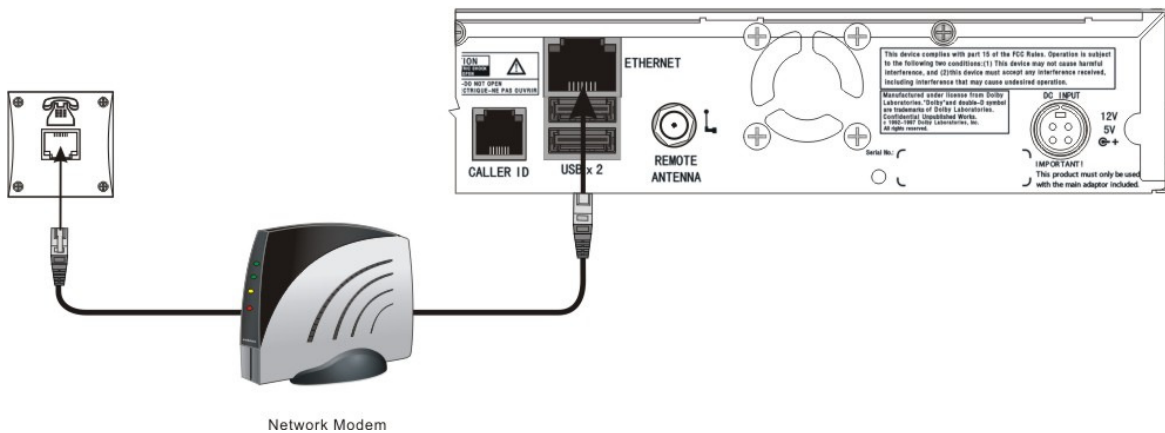


Figure 9-1 Connecting Hydra HD

2. Plug the socket end of the AC/DC adapter into the wall socket and the DC jack into the power connector on the Hydra HD.
3. The Hydra HD front panel power indicator will illuminate in orange color.
4. Within 10 seconds the Hydra HD front panel will display "BOOT" and then "WELCOME".

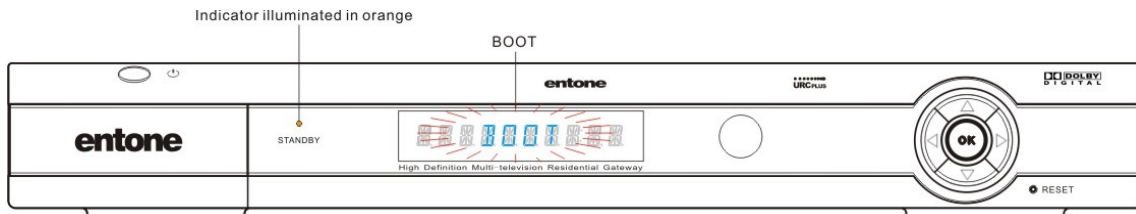


Figure 9-2 Hydra HD Starting

5. Within 60 seconds splash screen will appear on the TV.



Figure 9-3 Hydra HD Boot-up Splash Screen

6. The total boot-up time may vary depending on the middleware application and the service provider environment.

ATTENTION: If you have eSATA hard drive, connect power to the hard drive before powering up Hydra HD. If you power up Hydra HD before powering up the hard drive, the DVR and PLTV service will not be available. Please refer to previous section *Connecting eSATA Hard Drive* for details.

ATTENTION: When you connect a new hard drive for the first time, Hydra HD will display message saying the hard drive is being formatted when it boots up. The hard drive formatting may take up to 10 min depending on the hard drive size. Do not power off Hydra HD and hard drive during disk formatting. Please refer to previous section *Connecting eSATA Hard Drive* for details.

Chapter 10

10.1 Remote Controls

LOADING BATTERIES

The remote controls come with AA-size batteries, which need to be installed when you first receive your system. When you replace old batteries, you should replace all of the batteries. Use batteries of the same kind, for example alkaline or carbon zinc, and do not mix batteries of different kinds. Alkaline batteries last longer than carbon zinc.

WARNING: Mixing old and new batteries or different types of batteries poses a fire hazard.

To load batteries to remote control:

1. Press down on the battery cover's top latch and slide the cover off.
2. If you are changing out batteries, take out all of the old batteries.
3. Put the new batteries in. Make sure you match the plus ("+") ends with the plus markings on the battery case.
4. Slide the cover back into place.

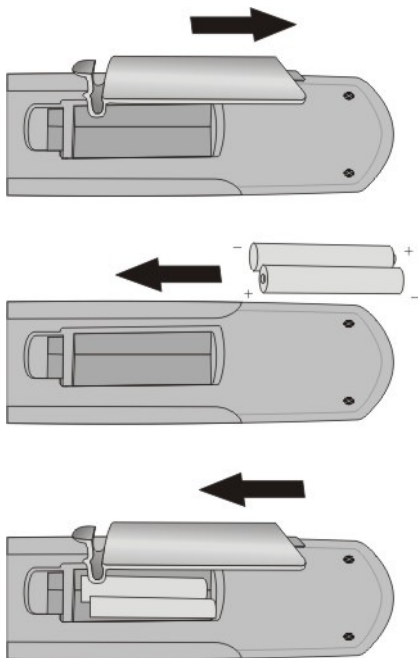


Figure 10-1 Loading Batteries to Remote Control

CONTROLLING THE HYDRA HD

Hydra HD is equipped with specially designed remote controls. The remote controls use radio signals to control the Hydra HD operations. These radio signals travel over long distances and go through walls and other solid objects.

Your Hydra HD comes with 3 remote controls. (Additional remote controls can be purchased separately.) Your remote controls must be registered to one of the 3 decoders before it can be used. One remote control can only be registered to one decoder. However, you can register at most 3 remote controls to a decoder. After registration, you need to use the corresponding remote controls to control the decoders.

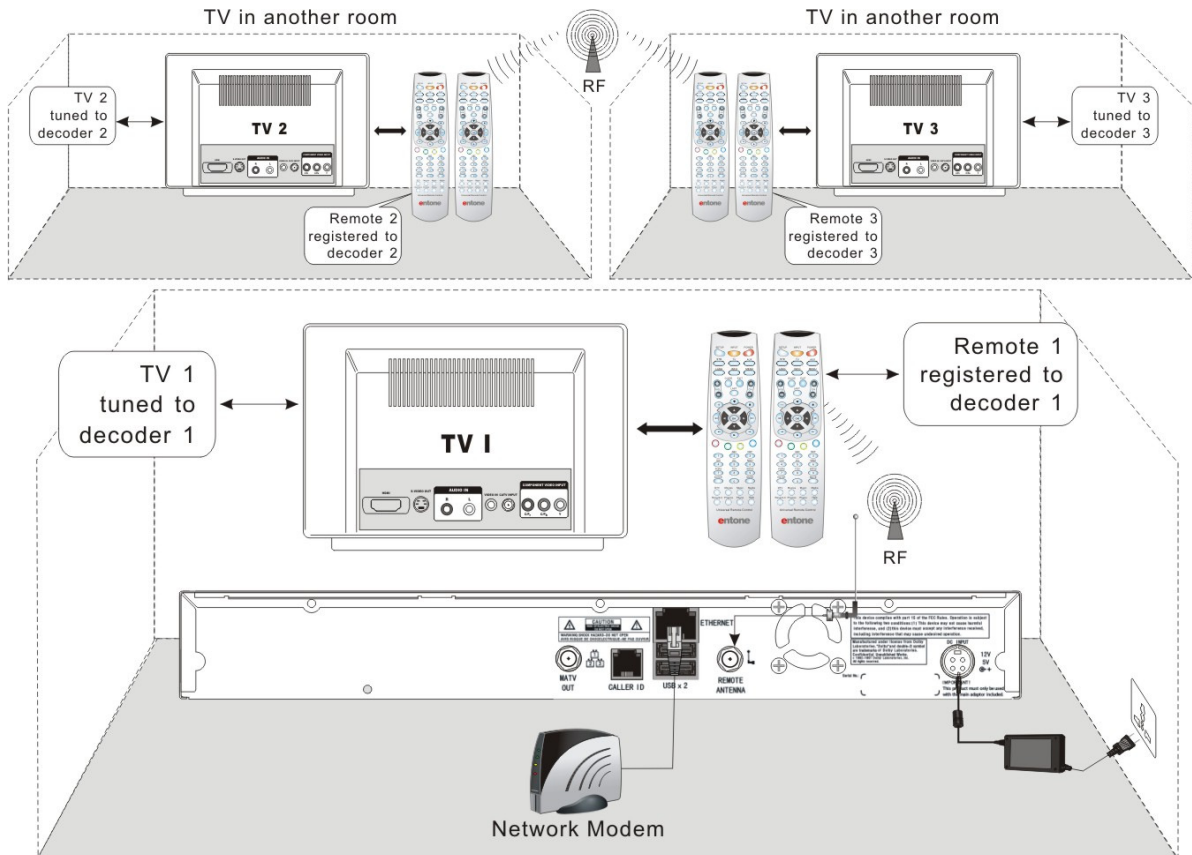


Figure 10-2 Controlling Hydra HD using RF Remote Control

ATTENTION: Hydra HD B-Series boxes must use new URC PLUS remote controls. Old remote controls without the “URC PLUS” logo do not work with Hydra HD B-Series boxes.

ATTACH THE RF REMOTE CONTROL ANTENNA

You need to attach the RF Remote Control Antenna to the Hydra HD's rear panel "REMOTE ANTENNA" input in order to use the radio control remotes.

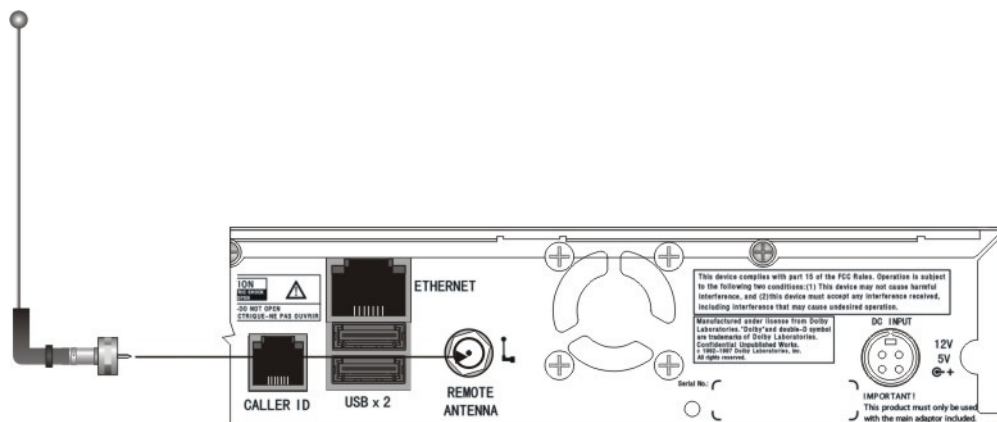


Figure 10-3 Attaching Remote Control Antenna

NOTE: Be sure to set the antenna straight up so that you can use the remote control from as far away as possible. Don't let the antenna touch anything.

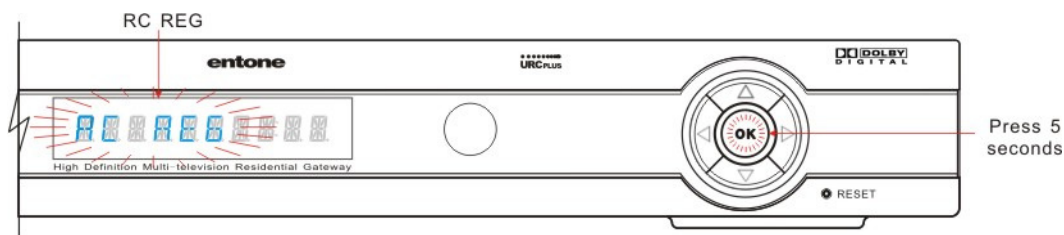
ATTENTION: If your remote control isn't working very well from far away, you may be experiencing interference from objects near your receiver. To improve your remote control's range, try any or all of the followings:

1. Place the receiver higher than all of the other equipment in your entertainment center.
2. Provide room above the receiver so that the antenna can be installed straight up. If this is not possible, tilt the RF Antenna at about a 30° angle.
3. Place the RF antenna outside the entertainment center by using a coaxial cable to connect the antenna to the Hydra HD.
4. Try moving the Hydra HD to other locations.

REMOTE CONTROL REGISTRATION

You must install the RF remote control antenna before doing the registration.

1. Press and hold the "OK" button on the Hydra front panel for approx. 5 seconds. When releasing the "OK" button, the Hydra front panel will display "RC REG". The Hydra is now in remote registration mode.



HydraHD front panel

Figure 10-4 Hydra in Remote Registration Mode

2. On the URC PLUS, press and hold the "STB" button for approx. 5 seconds. The "STB" button backlight will illuminate.

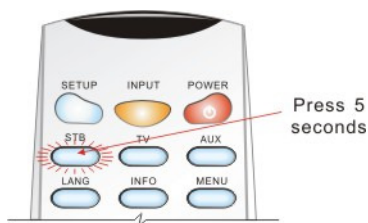


Figure 10-5 URC PLUS in Remote Registration Mode – Step 1

On the URC PLUS, press "STB" once again. Both the "STB" and "AUX" button backlight will illuminate.

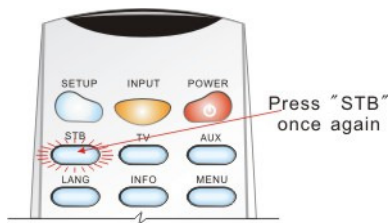


Figure 10-6 URC PLUS in Remote Registration Mode – Step 2

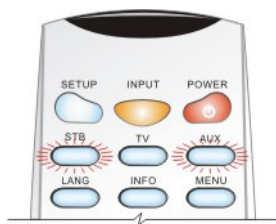


Figure 10-7 URC PLUS in Remote Registration Mode – Step 3

Now the URC PLUS is in registration mode.

3. Select the decoder to register by:
 - Press “1” to register URC PLUS to decoder 1.
 - Press “2” to register URC PLUS to decoder 2.
 - Press “3” to register URC PLUS to decoder 3.

After you enter a registration event, the “STB” button backlight on the URC PLUS will blink twice to indicate that the registration process was successful.

The Hydra HD front panel will display “RC REG Dx” to indicate that the registration process was successful.

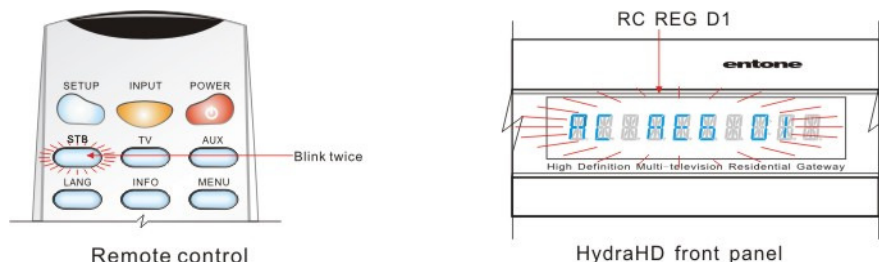


Figure 10-8 Remote Registration Successful

Pressing a key other than “0”, “1”, “2”, “3” or a button is not pressed within 10 seconds, the “STB” backlight will extinguish and the URC PLUS registration process will be terminated.

4. If the Hydra HD does not receive any URC PLUS registration event within 30 seconds, the process will be terminated.

The Hydra HD front panel displays the following messages during remote control registration:

Table 10-1 Remote Registration Messages

Front Panel Message	Description
RC REG TO	Registration times out
RC REGERR	Registration error
RC REG	In registration mode
RC REGEND	Registered to IR only mode
RC REG D1	Registered to decoder 1
RC REG D2	Registered to decoder 2
RC REG D3	Registered to decoder 3

Here are some principles of the remote registration method:

- Each decoder allows a maximum of 3 remote controls to be registered and a registration list is maintained. If the user has registered 3 remote controls and tries to register another remote control, the first registered remote control will be removed from the registration list. This works as a first-in-first-out fashion.
- Each remote control can only be registered for one decoder. If user tries to register a remote control which is already registered to another decoder, that remote registration will be removed from the original registration list.
- The registration list is maintained in order. If the secondly registered remote control is removed from the list, the third entry will move forth to the second and the third will be blank for a new remote control to be registered.

CONTROLLING YOUR TELEVISION AND OTHER A/V DEVICES

The Hydra HD remote controls can also be used to control TVs and other A/V devices such as DVD players and recorders. The remote controls use infrared (IR) light signals to control other devices that the remote is programmed to control. IR signals travel only short distances (40 feet or less), and cannot go through walls or other solid objects. You must point the remote control directly at these devices, with no objects blocking the line of sight.

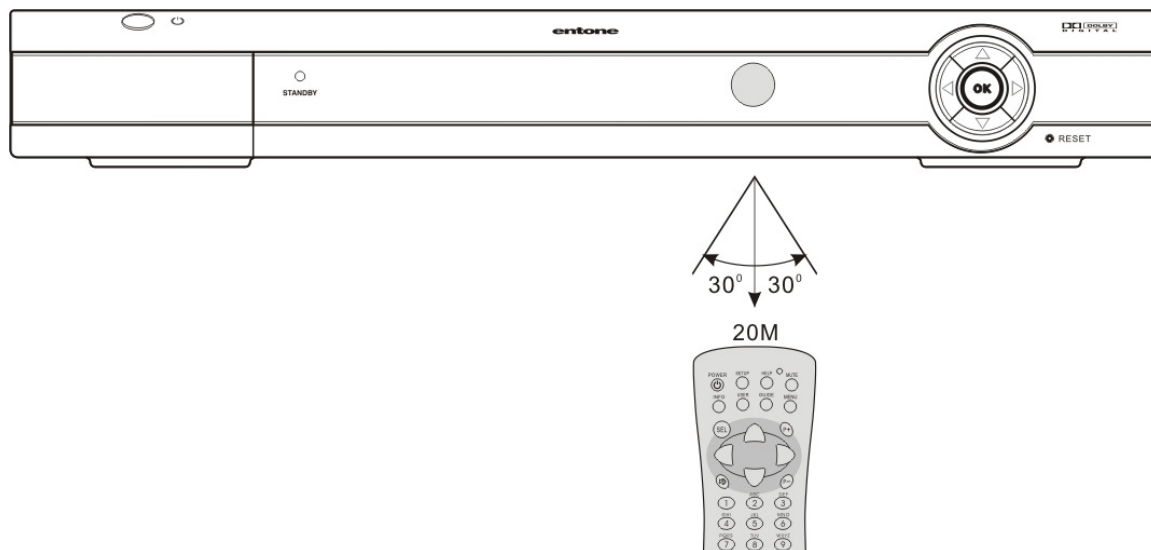


Figure 10-9 Controlling Devices using IR Remote Control

For details of how to program the Hydra remote controls and the supported devices, please refer to the *Hydra HD Quick Reference Guide* or *URC PLUS User's Guide*.

Chapter 11

11.1 Closed Captioning

The Hydra HD supports closed captioning. You can control captioning on decoder 1, 2 and 3 separately. To inquire closed captioning support of TV programs, please refer to your TV service provider.

Closed captioning on decoder 1 is controlled by the Hydra HD. To turn on or off closed captioning on decoder 1, press the “LANG” button on the remote control. The “LANG” button will toggle captioning on and off alternatively. For decoder 1, you cannot control the captioning through your TV.

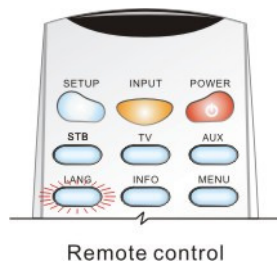


Figure 11-1 Controlling Decoder 1 Closed Captioning

NOTE: Captioning on “TV OUT”, “MATV OUT”, HDMI, Component, S-Video, Composite outputs of decoder 1 is toggled on or off at the same time.

Closed captioning on decoder 2 and 3 are controlled by the TVs. Your TV must have closed captioning feature in order to display captioning. Refer to your TV owner’s manual for details of captioning support and operation control of captioning.

NOTE: Control of captioning may vary for different service providers. For detailed usage of captioning, please refer to the service provider.


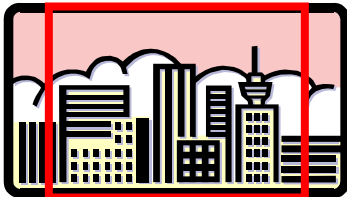
Chapter 12

12.1 Aspect Ratio


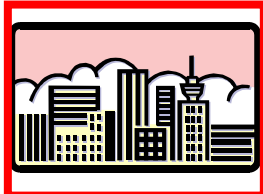
Hydra HD supports display of both standard definition content which is traditionally filmed in 4:3 aspect ratio and high definition content filmed in 16:9 aspect ratio to both 4:3 or 16:9 TV.

Setting of aspect ratio is provided by middleware. Please refer to your service provider for options available and detailed operation. Typically, aspect ratio is provided in following 3 modes:


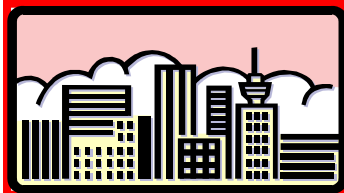
- 1) Mode 4:3 - You choose this mode when your TV is a traditional 4:3 TV.

	4:3 Content	16:9 Content
4:3 TV	Normal 	Left and Right are cropped 

- 2) Mode 4:3 Letter Box (4:3 LB) - You choose this mode when your TV is a traditional 4:3 TV.

	4:3 Content	16:9 Content
4:3 TV	Normal 	Letter Box with black bar on top and bottom 

- 3) Mode 16:9 - You choose this mode when your TV is a 16:9 TV.

	4:3 Content	16:9 Content
16:9 TV	Panorama – Stretched 	Normal 

Chapter 13

13.1 User Menu

The Hydra HD User Menu is an on-screen setup menu to set up your Hydra HD features. You need to connect the TV properly before using the User Menu.

Each decoder has its own User Menu. The User Menu provides the following setup features:

Table 13-1 User Menu Features

	Decoder 1	Decoder 2	Decoder 3
TV 1 Channel ID	▪ CATV Channel ID	N/A	N/A
TV 2 Channel ID	▪ CATV Channel ID	N/A	N/A
TV 3 Channel ID	▪ CATV Channel ID	N/A	N/A
Resolution	▪ 1080i ▪ 720p ▪ 480p ▪ 480i	N/A	N/A
Closed Captioning	▪ Enable ▪ Disable	N/A	N/A
Fan Speed	▪ High ▪ Middle ▪ Low ▪ Off	N/A	N/A
HPNA Mode	▪ Coax ▪ Phone	N/A	N/A
TiVo IR Key Code	▪ MAGNAVOX 10224-B ▪ CENTURION 00092-B ▪ Toshiba TSR-202 ▪ Hitachi HDS- 100R	N/A	N/A

NOTE: The features available in User Menu may vary in different middleware. Some of the features can also be set up through the user menu of the middleware.

USING USER MENU

To start the User Menu:

1. Use the corresponding remote control of the decoder.
2. Press "INPUT" and then "MENU" in sequence within 1 second.

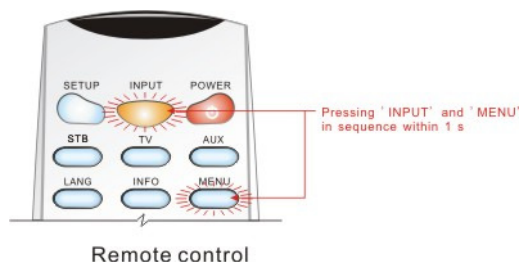


Figure 13-1 Triggering the User Menu

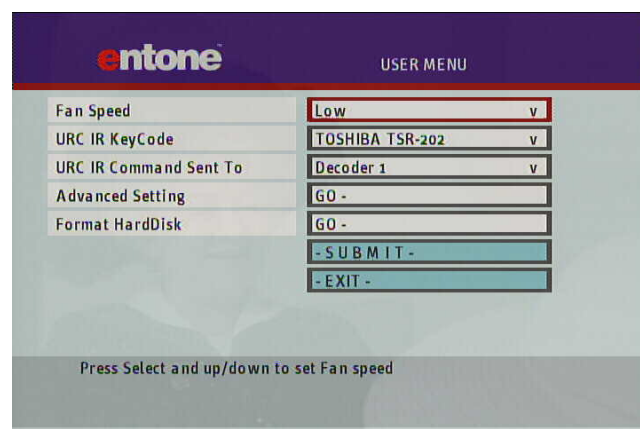
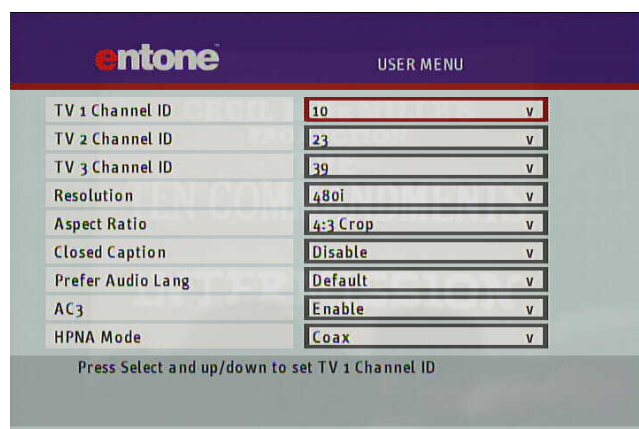


Figure 13-2 Decoder 1 User Menu

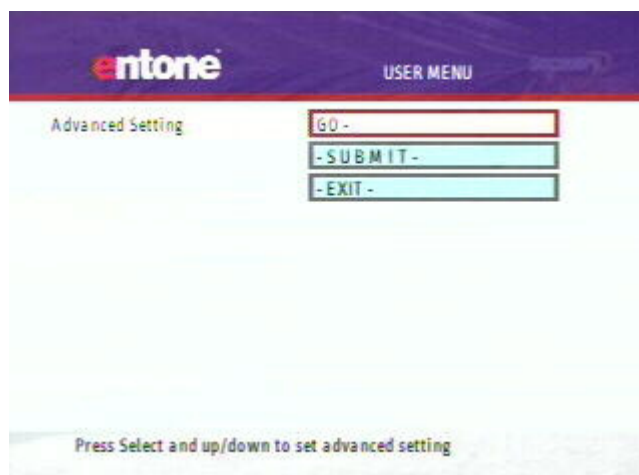


Figure 12-3 Decoder 2, 3 User Menu

To set up a feature:

1. Use remote control “UP” and “DOWN” arrow to select the feature you want to set. The selected feature will be highlighted by a red rectangle.
2. Press “OK”, the feature will be highlighted in navy blue color.

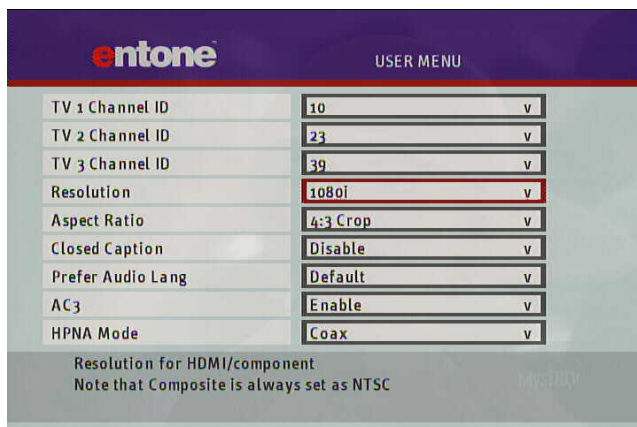


Figure 13-4 User Menu - Feature in Focus

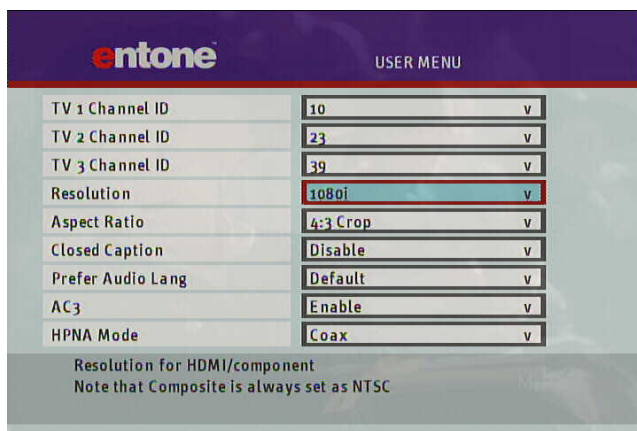


Figure 13-5 User Menu - Feature selected for choice selection

3. Use remote control “UP” and “DOWN” arrow to loop through available choices.
4. Press “OK” again when your choice is selected.
5. If you have other features to set up, repeat the above procedures.

To save your setup or exit:

1. If you have made any setup and want to save the settings, select “SUBMIT” in the User Menu. You will be notified the saving of your settings.

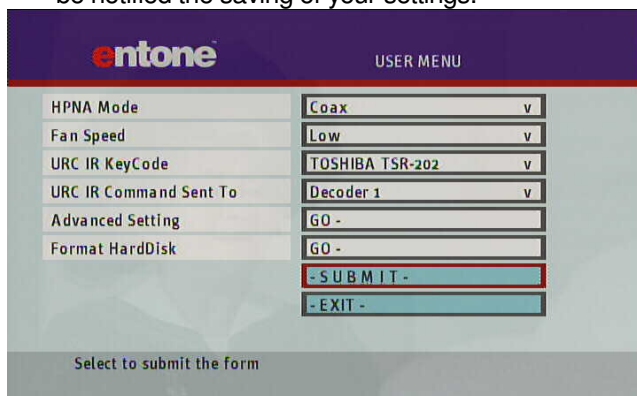


Figure 13-6 User Menu - SUBMIT highlighted for saving changes

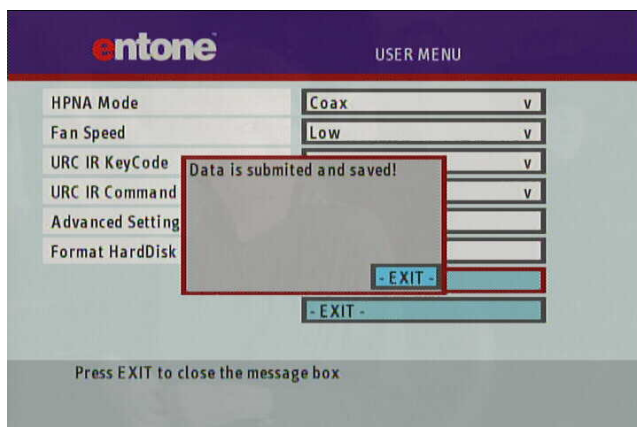


Figure 13-7 User Menu - Changes successfully saved

2. Select “EXIT” to quit the User Menu.

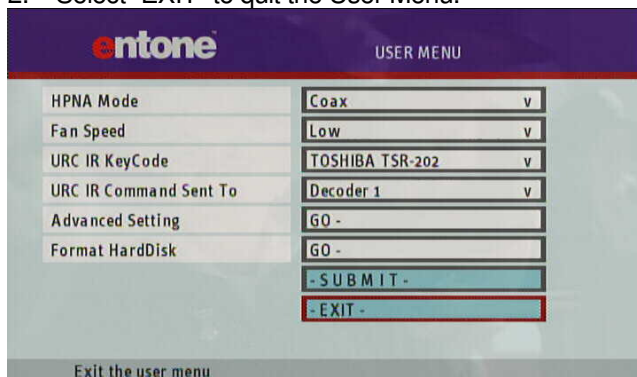


Figure 13-8 User Menu – Exit User Menu

ATTENTION: If you exit the User Menu without doing the “SUBMIT”, your changes will be lost and will not take effect.

NOTE: If you want to give up the changes, simply select “EXIT”.

SETTING CHANNEL ID

In “TV OUT”, decoder 1 by default is set to channel 10. In “MATV OUT”, decoder 1, 2 and 3 by default are set to channel 10, 23 and 39 respectively.

You can change the channel ID used by decoder 1, 2 or 3 by using the decoder 1 User Menu.

Follow procedures in section *Using User Menu*, to make the changes.

NOTE:

- Decoder 1 channel ID in “TV OUT” and “MATV OUT” cannot be set separately. They can only be set together.
- You can only set the channel ID by using decoder 1 User Menu.
- The new channel ID will only take effect after rebooting the Hydra HD.
- Do not set decoders to use the same channel ID.
- It is recommended to use channel IDs farther apart for the 3 decoders to minimize inter-modulation interference. For example, do not use consecutive channel ID 10, 11 and 12 for decoder 1, 2 and 3. Use channel ID 10, 23 and 39 instead.

SETTING HDMI AND COMPONENT OUTPUT RESOLUTION

You can use decoder 1 User Menu to set the HDMI and Component output resolution. You can also use the Hydra HD front panel “UP” arrow to set the resolution. The setting made in both ways is the same.

To use User Menu to set the output resolution, follow procedures in section *Using User Menu*, to make the changes.

Please refer to section *Setting HDMI and Component Output Resolution* for details of setting resolution.

SETTING CLOSED CAPTIONING

You can use decoder 1 User Menu to control decoder 1 closed captioning. You can also use remote control “LANG” button to control decoder 1 closed captioning. The setting made in both ways is the same.

To use User Menu to set closed captioning for decoder 1, follow procedures in section *Using User Menu*, to make the changes.

Please refer to section *Closed Captioning* for details of controlling closed captioning.

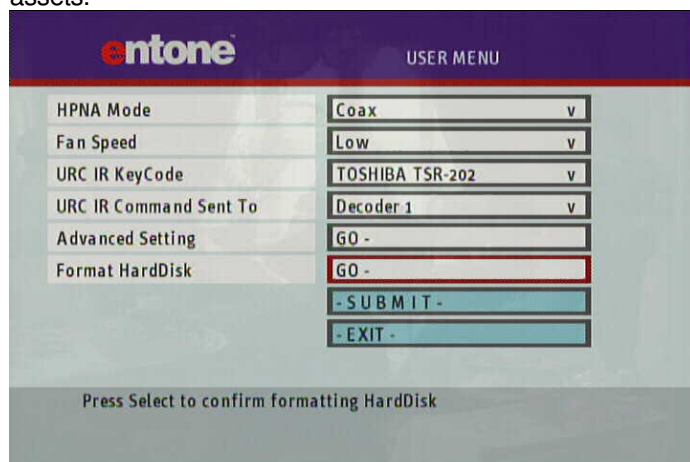
SETTING FAN SPEED

You can use decoder 1 User Menu to control the fan speed or turn off the fan at all. 3 fan speeds; high, middle and low are provided. You can control the fan speed with fan noise level which is acceptable to you. To ensure good heat dissipation, it is not recommended to turn off the fan.

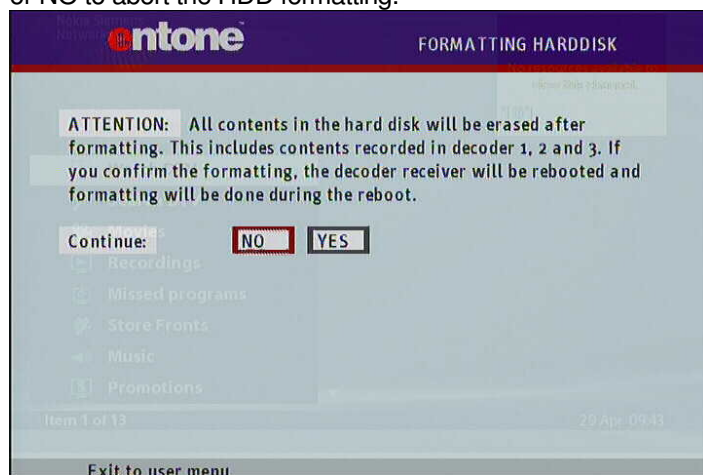
Follow procedures in section *Using User Menu*, to make the changes.

FORMATTING HARDDISK

If your HydraHD comes with harddisk for PVR or Pause Live TV (features depending on your IPTV subscription), you may use the “Format HardDisk” option to format the harddisk drive to clear the stored assets.



You will be prompted with the following confirmation screen, click OK to select YES to format the harddisk or NO to abort the HDD formatting.



SETTING HPNA

HomePNA is a relatively new technology, which allows you to network your home computers much like a LAN using your existing coaxial or telephone wiring. The Hydra HD is also equipped with HomePNA capability. You can use coaxial or telephone wiring to connect your Hydra HD to your home network. For detailed availability, setup and usage of HomePNA, please refer to your network and TV service provider.

You can select to use telephone wire or coaxial cable for HomePNA network access. Follow procedures in section *Using User Menu*, to make the selection.

SETTING TIVO IR KEYCODE

Hydra HD is equipped with an IR receiver at the front panel. If you have TiVo or Sling box, you can use the IR blaster provided by TiVo or Sling to control Hydra HD for actions such as channel switching for recording or remote network viewing.

Hydra HD has implemented the following 2 IR keycodes. You can configure TiVo or Sling, and your Hydra HD to use the same keycode in order to complete the setup.

- MAGNAVOX 10224-B
- CENTURION 00092-B
- Toshiba TSR-202 (Satellite Receiver)
- Hitachi HDS-100R (Satellite/DTRV Receiver)

NOTE: For Toshiba TSR-202 and Hitachi HDS-100R, only the following buttons were mapped:

- Channel UP/DOWN
- 0-9 number keys
- Power Button

Follow procedures in section *Using User Menu*, to make your IR keycode selection in Hydra HD.

Please refer to the TiVo or Sling user's manual for configuration and setup of the TiVo and Sling box keycode.

Chapter 14

14.1 Specifications

Main components	
Decoders	3 decoders per box 3 decoding and middleware running concurrently
Main CPU	300MHz MIPS (per decoder)
Memory	256MB SDRAM, 62MB Flash (per decoder)
Software	Real-time, multi-threaded embedded OS, Java Virtual Machine with MHP APIs, HTML 4 compliant browser with JavaScript
RF Universal Remote Control	3 remote controls come with the box Additional units can be purchased separately Max 3 remote controls per decoder IR carrier frequency is 36KHz using RC6 protocol
Graphics	
Color	True-color OSD support (up to 1920x1080 pixels) Programmable OSD scaler, flicker filter Alpha blending over video (8-bit) Picture in graphics with scaling 2-D graphic accelerator
Audio and video	
Video Input Formats	MPEG-1, MPEG-2 MP@HL MPEG-4.2 ASP@L5 MPEG-4.10 BP@L3, MP@L4.0 and HP@L4.0.
Video Output Formats	NTSC/PAL composite, S-video and analog YpbPr component with optional Macrovision v7.1 L1 protection SDTV or HDTV resolution (1080i60, 720p60, 480p60, 480i60)
Audio Input Formats	MPEG-1 Layers I & II mono, stereo, joint stereo and dual channel MPEG-2 5.1; Dolby digital 5.1 channel AC-3 6-channel
Audio Output Formats	Dolby Digital 5.1 channel AC-3 6-channel PCM and S/PDIF (IEC-1937/IEC-958) Dolby Digital or MPEG-2 5.1 down mixed to Dolby Prologic or 2-channel PCM Analog stereo
Closed Captioning	CEA-608, EIA-708 Captioning format – ATSC, SCTE and Divicom
Subtitling	DVB EN 300 743
Teletext	Support pass-through teletext ETSI EN 300 472 and ITU-R B-625. (Pass-through teletext is not supported in HDMI.)
Connectors	1 x RF TV OUT type-F connector for 1 modulated channel 1 x RF MATV OUT type-F connector for 3 modulated channels 1 x RCA composite video output 1 x RCA composite audio output 1 x S-Video output 1 x YpbPr Component output 1 x HDMI (HDMI 1.1) 1 x S/PDIF digital coaxial audio RCA output 1 x S/PDIF digital optical audio TOSLINK output

	1 x RF remote control antenna type-F connector
Tuner	Optional ATSC/DVB-T tuner
Network interfaces	
Ethernet	Ethernet (10/100Base-T auto-sensing)
Caller ID	Bell 202 and ITU-T V.23 FSK Demod, Bellcore GR-30-CORE & SR-TSV-002476 (CND, CNAM, VMWI, CIDCW)
Home networking	Optional HPNA 3.0 (Telephone wire / Coaxial Cable)
Physical and mechanical	
Dimensions	350 x 50 x 310mm (WxHxD)
Weight	1.5 kg
Operating voltage	100-240VAC RMS
Operating current	1.5A RMS, max.
Operating frequency	Range ~47-63Hz
Output voltage	12V/2A; 5.2V/5A
Operating temperature	10° to 35° C (50° to 95° F)
Relative	Humidity non-condensing
Regulatory compliance	UL, CE, IEC65, FCC part 15 (pending)
Security controls	
Anti-Taping	Macrovision (optional)
Parental Controls	Provided through middleware partner integration

NOTE: Above specification for reference only.

Chapter 15

15.1 Troubleshooting the Hydra

This section describes some of the most common problems that might be encountered when installing Hydra HD, and the solutions to those problems.

Symptom	Remedy	Reference
Remote controls do not work	<ul style="list-style-type: none"> • Check batteries are correctly loaded. • Check that new URC PLUS remote control is used. • Check remote control is registered. In case of doubt, register the remote control again. • You may be experiencing interference from objects near the remote control antenna. Follow instruction in section 9.3 for improvements. 	<i>Section 10 – Remote Controls</i>
Remote controls cannot control the programmed devices	<ul style="list-style-type: none"> • Device manufacturers may change their device codes or no device code can be found in the Universal Remote Control User's Guide. Try searching the device code according to the procedures listed in the Universal Remote Control User's Guide. 	<i>Hydra HD Quick Reference Guide Universal Remote Control User's Guide</i>
Standby indicator at the front panel not lit	<p>The power supply to the box is probably not working:</p> <ul style="list-style-type: none"> • Check that the AC/DC adapter is connected properly to the DC INPUT connector. • Check that there is power from the power source. • Make sure you have pressed the Standby button at the top of the box and that the Standby / On light is green. 	<i>Section 9 – Powering up Hydra</i>
Standby indicator on the front panel stays orange for more than 60 seconds	<ul style="list-style-type: none"> • Check that the ADSL cable is properly connected between the ADSL connector and the ADSL modem. The ADSL Link indicator should be orange and steady. • Check that the ADSL modem is properly connected to the telephone socket. 	<i>Section 7 – Powering up Hydra</i>
Standby indicator turns green; no picture on the primary TV	<ul style="list-style-type: none"> • Check that the video output connector of the Hydra HD is properly connected to the input connector of the primary TV. • "TV OUT" or "MATV OUT" (coaxial connection): the TV set should be set to channel 10. • Composite, S-VIDEO, Component or HDMI connection: the TV set should be set to the correct input mode for the signal. • Component or HDMI connection: the resolution selected in Hydra HD is supported 	<i>Section 4 – Connecting the Primary TV</i>

	by your TV.	
Picture shows on the primary TV but not any other TV	<ul style="list-style-type: none"> • Check that the RF cable is properly connected between the “MATV OUT” and the main video source socket. • Check that the TV is set to the proper channel (10, 23, or 39) and in CATV mode. 	<i>Section 5 – Connecting TV(s) in Another Room(s)</i>
No sound	<ul style="list-style-type: none"> • Check that the audio cable is connected to the correct input in your device. • Is the volume of the device turned down to the minimum level? • If HDMI or component is used. Try disabling AC-3. • If HDMI is used, check the resolution and try to use the composite audio output. 	<i>Section 6 – Connecting to Audio System</i>
Multi-channel sound not working	<ul style="list-style-type: none"> • Check with service provider that programs contain multi-channel AC-3 signal. • Check that AC-3 is enabled in the Hydra HD. • Check your TV or A/V equipment for AC-3 multi-channel setup. 	<i>Section 6 – Connecting to Audio System</i>
No sound, poor sound or popping noise on HDMI	<ul style="list-style-type: none"> • HDMI is an evolving technology, so it is possible that some TVs may not operate properly with Hydra HD. In case of problem, use component video output and composite audio output to connect your primary TV. 	<i>Section 4 – Connecting the Primary TV</i>

